



Figure 1. Depicted recombinant FAA (rFAA), produced from cloned partial cDNA of bovine FAA gene in *E. coli*, showing the comparative position of the segment corresponding to intact bovine FAA.

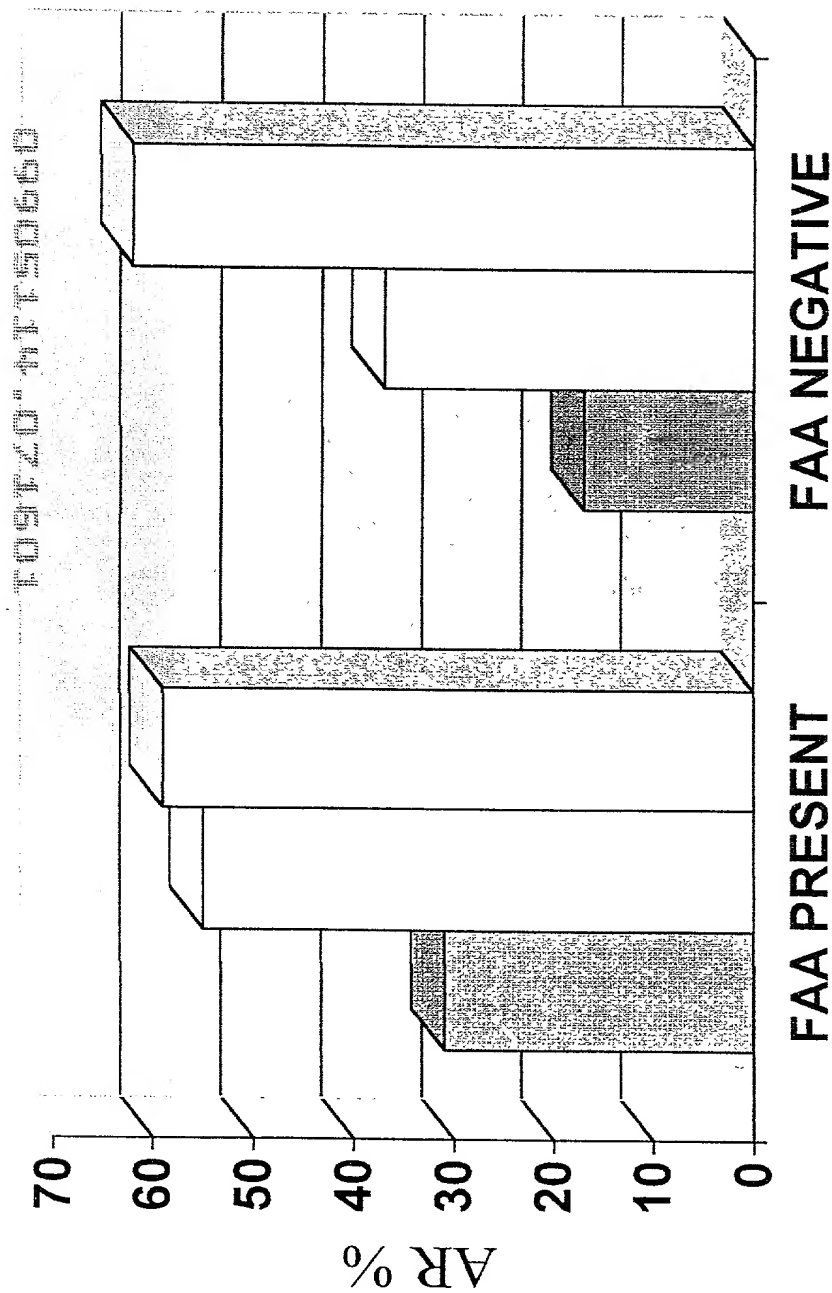


Figure 2. Percent increase in acrosome reaction for each treatment above the control level. FAA present represents a fertile bull with detectable FAA on sperm and FAA negative represents a non-fertile bull without detectable FAA on sperm. The fertile bull (FAA present) reacted better to heparin induction of capacitation/acrosome reactions. Addition of FAA (5 ug/mL) stimulated maximum increase of acrosome reactions for each bull.

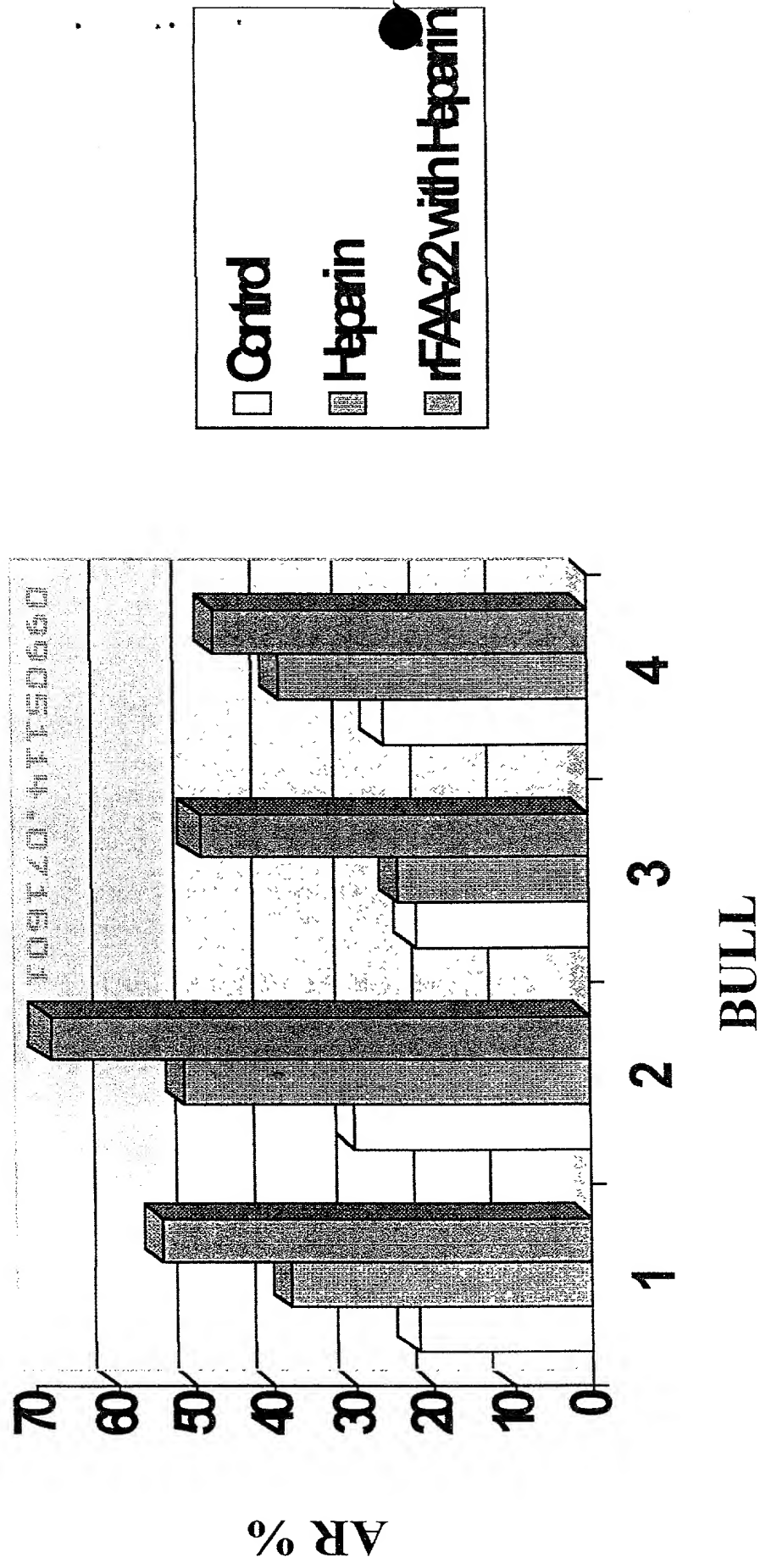


Figure 3. Effects of heparin alone (10 $\mu\text{g/ml}$) or recombinant FAA (rFAA, 20 $\mu\text{g/ml}$) with heparin to stimulate acrosome reaction in washed sperm from four fertile bulls.

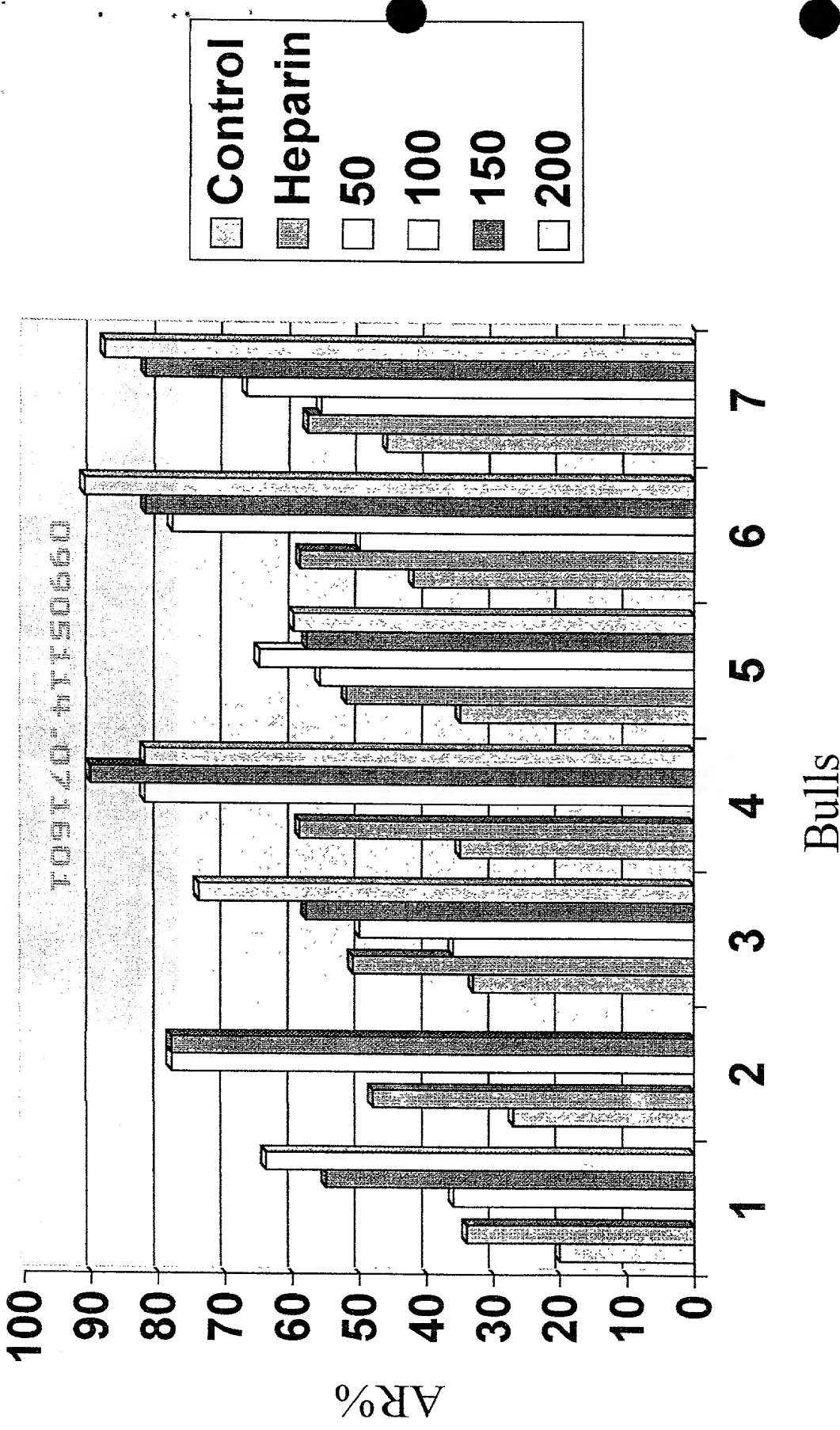


Figure 4. Dose-response comparisons ($\mu\text{g/ml}$) of the 22kDa recombinant FAA (rFAA) added with heparin ($10 \mu\text{g/ml}$) to washed sperm. Averages from two to five different ejaculates are presented as each datum point for each bull.

Thursday, July 06, 2000

1 ACAACAGGAT CTGCCCCATA CTGATGGAGA AGCTAAACGG AAATTCAAGA
51 AAAGGCATAA CATACAACTA TGTGATTAGC TCTCGCCTTG GAAGAAACAC
101 ATATAAAGAA CAGTATGCCT TTCTCTATAA AGAAAAGCTA GTGTCTGTAA
151 AACAAAGCTA CCTCTACCAC GACTATCAGG CTGGAGACGC AGATGTGTTT
201 TCCAGGGAAC CCTTTGTGGT CTGGTTCCAG TCACCCTACA CCGCTGTCAA
251 GGACTTCGTG ATTGTCCCCC TGCACACCAC CCCTGAGACA TCCGTTAGAG
301 AGATTGATGA GCTGGCTGAT GTCTACACAG ATGTGAAACG TCGCTGGAAT
351 GCAGAGAATT TCATTTTCAT GGGTGACTTC AATGCTGGCT GCAGCTACGT
401 CCCCAGAAG GCCTGGAAGG ACATCCGCCT GAGGACGGAC CCAAGTTTCG
451 TTTGGCTGAT CGGGGACCAA GAGGACACCA CGGTCAAGAA GAGCACAAAC
501 TGCGCCTATG ACAGGATCGT GCTTAGAGGA CAAAATATTG TCAACTCTGG
551 TGGTCCTCAA TCAAACCTCG TCTTTGATTT CCAGAAAGCT TACAGGTTGT
601 CTGAATCGAA GGCCCTGGAT GTCAGCGACC ACTTTCCAGT TCATCATCAT
651 CATCATCATG AAGAACCATG A

Notes: Upstream primer sequence;

Codon sequence responsible for the rFAA product;

Stop codon.

090514.07601

Figure 6

5' GAGAAGCTAAACGGAAATTCAAGAAAAGGCATAACATACAACTATGTGATTAGCTCTCGC
1 -----+-----+-----+-----+-----+-----+ 60
a E K L N G N S R K G I T Y N Y V I S S R -

CTTGGAAGAAACACATATAAAGAACAGTATGCCTTTCTCTATAAAGAAAAGCTAGTGTCT
61 -----+-----+-----+-----+-----+-----+ 120
a L G R N T Y K E Q Y A F L Y K E K L V S -

GTAAACAAAGCTACCTCTACCACGACTATCAGGCTGGAGACGCAGATGTGTTTTCCAGG
121 -----+-----+-----+-----+-----+-----+ 180
a V K Q S Y L Y H D Y Q A G D A D V F S R -

GAACCCTTTGTGGTCTGGTTCCAGTCACCCTACACCGCTGTCAAGGACTTCGTGATTGTC
181 -----+-----+-----+-----+-----+-----+ 240
a E P F V V W F Q S P Y T A V K D F V I V -

CCCCTGCACACCACCCTGAGACATCCGTTAGAGAGATTGATGAGCTGGCTGATGTCTAC
241 -----+-----+-----+-----+-----+-----+ 300
a P L H T T P E T S V R E I D E L A D V Y -

ACAGATGTGAAACGTCGCTGGAATGCAGAGAATTTTCATTTTCATGGGTGACTTCAATGCT
301 -----+-----+-----+-----+-----+-----+ 360
a T D V K R R W N A E N F I F M G D F N A -

GGCTGCAGCTACGTCCCCAAGAAGGCCTGGAAGGACATCCGCCTGAGGACGGACCCCAAG
361 -----+-----+-----+-----+-----+-----+ 420
a G C S Y V P K K A W K D I R L R T D P K -

TTCGTTTGGCTGATCGGGGACCAAGAGGACACCACGGTCAAGAAGAGCACAAACTGCGCC
421 -----+-----+-----+-----+-----+-----+ 480
a F V W L I G D Q E D T T V K K S T N C A -

TATGACAGGATCGTGCTTAGAGGACAAAATATTGTCAACTCTGGTGGTCCTCAATCAAAC
481 -----+-----+-----+-----+-----+-----+ 540
a Y D R I V L R G Q N I V N S G G P Q S N -

CTCGTCTTTGATTTCCAGAAAGCTTACAGGTTGTCTGAATCGAAGGCCCTGG 3'
541 -----+-----+-----+-----+-----+-----+ 592
a L V F D F Q K A Y R L S E S K A L -